REMARKS

Reconsideration of the application is respectfully requested. Claims 1-24 are pending and remain in this application. Claims 4, 6, 18, 20 and 23 have been amended. No claims have been added or cancelled.

Rejections Under 35 U.S.C. § 102

The Office Action has rejected claims 1-3, 5-19, 21 and 22 under 35 U.S.C. § 102(e) as being anticipated by Rajski et al. U.S. Patent 6,327,687 (hereinafter "Rajski"). Applicant respectfully traverses this rejection.

The Office Action incorrectly states that Rajski teaches "filling said non-care bits with a repeated value to form a highly compressible test vector data set" as stated in claim 1. The Office Action states that Rajski teaches that the remaining scan cells that are 'don't cares' ... are filled with "a pseudo-random values" generated (Col. 8, Lines 57-60). However, claim 1 requires that the remaining scan cells be filled with a "repeated value", not "pseudo-random values". Pseudo-random values plainly differ from repeated values, meaning that Rajski cannot anticipate claim 1.

Applicant notes that claims 2, 3 and 5-8 are allowable because they are dependent on claim 1, which as discussed above, is allowable.

In addition, the Office Action has incorrectly rejected claim 3 under Rajski. Figure 7 in Rajski describes XORing input valuables "a" (compressed test pattern bits, see Col. 8, Line 20-21). In contrast, the method of claim 3 comprises forming a differential vector data set (i.e., a highly *compressible* test vector data set) by XORing care bits with corresponding bits in a background vector data set. The input valuables "a" differ from both the care bits and the

background vector data set in that the variables "a" in Rajski are "compressed test pattern bits" while the care bits are *recovered* from the compressed data (see claim 1). "Compressed" data plainly differs from "compressible" data, meaning that claim 3 is distinguished from Rajski.

The Office Action also argues that "a test cube" in Rajski corresponds to "a background vector data set" as required by claim 3. This is not correct. If "a test cube" corresponded to "a background vector data set" like that in claim 3, the care bits and "a test cube" would be XORed. However, as above, Figure 7 in Rajski describes that input valuables "a" are XORed. Thus, the statement in the Office Action is internally inconsistent.

In addition, the Office Action incorrectly rejects claim 5. The citation (Col. 10, Line 64 through Col. 11, Line 20) to Rajski in the Office Action describes solving equations using well-known techniques such as Gauss-Jordan elimination techniques. In contrast, claim 5 requires that a header be attached to the differential vector data set where the header identifies the algorithm and seed used to generate the background vector data set. Rajski does not disclose anything about attaching headers to data sets, meaning that Rajski cannot possible anticipate claim 5.

The Office Action has also incorrectly rejected claim 6. As stated above with respect to claim 5, Rajski does not teach attaching a header to a differential vector data set. Thus, Rajski cannot teach extracting the "attached header" and "reconstructing ... from said header". Further, as above, while Figure 7 in Rajski describes XORing input valuables "a" (compressed test pattern bits, see Col. 8, Lines 20-21), Figure 7 does not teach XORing said reconstructed "background vector data set" with said extracted "differential vector data set" as required by claim 6. Thus, claim 6 is also allowable.

The Office Action has also incorrectly rejected claim 8. The portion of Rajski (Col. 3, Lines 10-11) cited in the Office Action only teaches that random patterns are used "as a solution to compress the test data" (Col. 3, Lines 11-12). The citation does not teach the specific data arrangement required by claim 8, which is that the background vector data set comprises a random distribution of bits having values of both "0" and "1".

The Office Action incorrectly states that Rajski teaches "generating redundant test vectors" as required by claim 9. Though Rajski describes that an "ATPG tool generates test vectors", Rajski does not teach generating "redundant" test vectors, which is required by claim 9. Further, the Office Action erroneously states that Rajski teaches "utilizing a repeat capability ... with the redundant vectors" at Col. 4, Lines 57-60. No such teaching is present in the citation. All this citation provides is the unremarkable proposition that "[t]he compressed test pattern is stored in an ATE and is applied on input channels to an integrated circuit being tested." This says nothing about generating redundant test vectors and therefore has nothing to do with the subject matter of claim 9.

Applicant notes that claim 10-12 are allowable because these are dependent on claim 9, which should be allowed.

In addition, the Office Action has incorrectly rejected claim 10. The Office Action relies on Figure 8 of Rajski. However, Figure 8 in Rajski describes a representation of the compression process (Col. 11, Lines 58-59). Figure 8 does not teach generating test vectors as required by claim 10. Moreover, neither Figure 8 nor its description (found at Col. 11, Line 58 - Col. 12, Line 11) teach "repeating a care bit value ... neighboring test vectors", which is required by claim 10.

In addition, the Office Action has incorrectly rejected claim 11. Rajski does not teach anything similar to the requirement in claim 11 that "said care bit value is repeated in the same column for each row of said matrix, until a different care bit value is encountered". The Office Action states that Rajski teaches a test vector data that comprises a matrix of test vectors arranged in rows and columns. However, the Office Action points to no teaching of this particular feature.

The same arguments regarding claim 1 apply to claim 13. Applicant notes that claim 14 is allowable because it is dependent on claim 13. Therefore, claim 14 should be allowed.

The same arguments regarding claim 9 apply to claim 15. Thus, Claim 15 should be allowed.

Applicant notes that claim 16 is allowable because it is dependent on claim 15, which is allowable. In addition, the same arguments regarding claim 10 apply to claim 16. Thus, claim 16 should be allowed.

The Office Action incorrectly states that Rajski teaches "forming a compressed test data set by setting care bits and non-care bits in original test data to a repeated value" as required by claim 17. Rajski contains no such disclosure. Instead, Rajski describes that the remaining scan cells that are 'don't cares'...are filled with "a pseudo-random values" generated (Col. 8, Lines 57-60). Rajski does not teach setting care bits and non-care bits in original test data to a "repeated value", which is required by claim 17.

Applicant notes that claims 18 and 19 are allowable because these are dependent on claim 17, which is allowable. In addition, the arguments regarding claim 3 and 8 also apply to claims 18 and 19, respectively.

The Office Action has incorrectly rejected claim 21. The Office Action incorrectly states that Figures 10 and 11 in Rajski teach "a second testing technique ...in neighboring non-care bit positions" as required by claim 21. Neither Figures 10-11 nor their descriptions provide any such teaching. Rajski does not teach anything relating to "repeating test vectors of a minimum set of test vectors obtained by repeating a last care bit in neighboring non-care bit positions" as stated in claim 21. Instead, Figure 10 shows a decompressor while Figure 11 shows a method for incrementally appending symbolic expressions for compression. There is simply no such teachings relating to repeating test vectors, as required by claim 21.

Applicant notes that claim 22 is allowable because it is dependent on claim 21, which as discussed is allowable.

Rejections Under 35 U.S.C. § 112

The Office Action has rejected claims 4, 20, 23 and 24 under 35 U.S.C. § 112. Specifically, the Office Action has rejected claims 4 and 20 because "it is unclear to the Examiner how large or small the number of care bits need to be XORed in the test vector."

Applicant has amended claim 4 to read "... said XORing sets a substantial portion approximately half of said care bits ...". This amendment is supported throughout the specification, with particular reference to Page 6, Lines 1-3 . No new matter has been added.

Applicant notes that the Office Action states that Table 8 in Rajski teaches that XORing sets a substantial portion of the care bits to a value 0 (see page 4 of the Office Action).[1] Though the Table 8 does describe the use of an XOR function, Table 8 and its description do not teach

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[1] Applicant notes that even though the Office Action did not reject claim 4 under Rajski, the Office Action appears to argue that claim 4 is anticipated by Rajski.

XORing sets of approximately half of said care bits. Indeed, the Table 8 describes XORing many different variables that change according to specified conditions. Rajski's disclosure that many different variables can be XORed is plainly not a teaching to XOR approximately half of the care bits to a value 0, meaning that Rajski does not teach to limitations found in claim 4. These same arguments apply to claim 20. Therefore, Applicant respectfully submits that claims 4 and 20 are allowable.

Applicant has amended claim 23 to "... tests ~~sufficient~~ for achieving a certain fault coverage threshold ...", and "...additional tests ~~sufficient to raise~~ raising the fault coverage ...". Applicant respectfully submits that this clarification in claim language overcomes the rejection under Section 112, meaning that claim 23 is in condition for allowance. Because claim 24 is dependent on claim 23, claim 24 is also in condition for allowance.

Based on the foregoing, Applicant respectfully submits that this application is in condition for allowance, which is respectfully requested.

Should the Examiner have any questions or comments on the application, the Examiner should feel free to contact the undersigned via telephone.

Respectfully submitted,

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Dated: <u>November 5, 2003</u>   By: _____
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